

**SWAN LAKE – LAKE TYEE TRANSMISSION INTERTIE
DOE GRANT # DE-FG07-98ID13607
MANAGEMENT PLAN
October 15, 2002**

1. Project Development:

Project Purpose. The purpose of the Swan Lake – Lake Tyee Intertie is to construct a fifty-seven (57) mile 138 kv (69 kv initially) hydroelectric transmission line connecting two Four Dam Pool Power Agency owned hydroelectric facilities, one at Swan Lake on the Upper Carroll Inlet and one at Lake Tyee on the Bradfield Canal.

Project Location. The Intertie project is located between Swan Lake on the Upper Carroll Inlet near Ketchikan, Alaska and Lake Tyee on the Bradfield Canal near Petersburg, Alaska.

Project History. The community of Ketchikan currently provides its energy needs through self owned hydroelectric and diesel generation plants and purchased power from the Swan Lake Hydroelectric facility owned by the Four Dam Pool Power Authority. Presently, the annual energy requirement is approximately 155,000,000 kilowatt hours (estimated 2002 net generation).

According to the Utility's electric load growth study as updated by R. W. Beck, Inc. in February of 1998, by the year 2023 Ketchikan's energy demand is anticipated to increase to 163,000,000 kilowatt hours under low growth conditions; to 193,000,000 kilowatt hours under medium growth conditions (the base case) and to 276,000,000 kilowatt hours under high growth conditions. Under a base case scenario, Ketchikan's energy needs in 2023 will exceed its hydro generation capability together with the Swan Lake Hydro facility by 45,000 Kilowatt hours.

The Lake Tyee Hydroelectric facility provides power to the communities of Wrangell and Petersburg. The power generation capability of the Lake Tyee Hydro facility exceeds the power requirements of Wrangell and Petersburg by over 80,000 kilowatt hours.

Construction of the Swan Lake-Lake Tyee Intertie will allow Ketchikan access to the unutilized capacity of the Lake Tyee Hydro facility. Availability to this unused energy will decrease KPU's reliance on diesel generation, particularly during low precipitation periods and/or extended maintenance of existing energy producing sources. By accessing a reliable, low-cost power source to supplement KPU's own generation sources, the Swan Lake – Lake Tyee Intertie will provide Ketchikan with the necessary long-term generation capacity required if the community is to economically diversify in a meaningful manner. Lastly, the Intertie will maximize Four Dam Pool Power Agency's generation sales, either stabilizing or enabling a reduction to the current wholesale power rate (WPR) of \$0.068 per kilowatt hour.

Physical Project Description. The Swan Lake – Lake Tyee Intertie is a fifty-seven (57) mile 138 kv (69 kv initially) hydroelectric transmission line connecting the Four Dam Pool Power Agency owned hydroelectric projects at Swan Lake on the Upper Carroll Inlet and

Lake Tyee on the Bradfield Canal. The route crosses primarily federal land with a small portion crossing State land and State tidelands.

The above ground transmission line consists of 397.5kcmil 30/7 AACSR/AW "LARK" conductors strung over 282 steel towers mounted on micropile foundations and caps. All water crossings are above the water and utilize 611kcmil alumoweld 37#BAW conductors. Electrical substations will be constructed at the Swan Lake and Lake Tyee ends of the transmission line.

2. Costs and Financing

Project Cost. As detailed in Attachment A, the updated cost estimate for the Intertie is \$77,289,454. The cost estimate assumes a two-year construction project beginning in 2003.

Project Funding. As detailed in Attachment B, KPU has secured \$63,971,849 in federal and state grants and anticipates an additional \$13,300,000 in Federal grants for a total of \$77,271,849.

3. Permitting

All required permits for the construction of the transmission line have been secured, copies of which have been forwarded to the Department of Energy, Idaho Operations Office. Following is a list of the permits received:

<u>Federal Permits</u>	<u>Date Received</u>
Final Environmental Impact Statement, Record of Decision	August 1997
U.S. Forest Service, Special Use Permit	September 2001
Corps of Engineers Permit for Transmission Towers and Temporary Floating Support Facilities For Construction, (COE No. 2-950105)	March 1998
<u>State Permits</u>	
State of Alaska Land Use Permit	April 2002
Certificate of Reasonable Assurance for Transmission Towers and Temporary Floating Support Facilities For Construction, (State ID No. AK9801-07JJ)	March 1998

Additional Permits Not Received

The construction contractor may require marshalling areas and land camps for construction purposes. These permits will be applied for as needed.

4. Project Scheduling

Design of the Intertie transmission line has been completed by KPU's design engineer, Washington Group International, Inc. Washington Group's design of associated substations will be completed by July 2003.

A contract for clearing approximately 18 miles of the Intertie, between Swan Lake in Upper Carroll Inlet and Neets Bay, was awarded to Columbia Helicopters, Inc. in April of 2002. In July of 2002, an approximate four-mile segment was deleted from Columbia's contract and will be cleared by Silver Bay Logging, Inc. in conjunction with their Upper Carroll Inlet Timber Sale with the U.S. Forest Service. As of the date of this report, work is in progress and is anticipated to be complete by November 15, 2002.

Included as Attachment C is a Project Construction Sequence Bar Chart, a Cumulative Cost Graph and a project one line drawing identifying the project route and clearing accomplished as of the end of the 2002 construction season.

5. Project Management

Attached as Exhibit D is an organizational/task chart identifying key tasks and individuals and/or organizations responsible for the tasks. All contracts for work will adhere to purchasing requirements of the City of Ketchikan including the assessment of liquidated damages in amounts sufficient to insure timelines are met.

The project will be managed by the City of Ketchikan dba Ketchikan Public Utilities. The City of Ketchikan is a Home Rule Municipality under the laws of the State of Alaska. The Charter and Municipal Code outlining the powers and authority of the City of Ketchikan can be viewed via the internet at www.city.ketchikan.ak.us.

KPU's Management Team

Karl R. Amylon, KPU General Manager. Karl R. Amylon has ultimate responsibility for the Swan Lake-Lake Tyee Intertie Project as Ketchikan's City Manager/KPU General Manager. Mr. Amylon has served as City Manager since 1995.

Robert Newell, Finance Director. The City's Financial Manager is Robert Newell, who has served in this capacity since 1991. Mr. Newell provides all financial reporting to the City Manager/General Manager and to the City Council. Mr. Newell has been designated as KPU's Business Officer for the Swan Lake-Lake Tyee Intertie project.

Jim Voetberg, Assistant General Manager/Intertie Project Manager. Jim Voetberg has been designated as KPU's Project Manager for the Swan Lake-Lake Tyee Intertie project. Mr. Voetberg serves as Ketchikan's Assistant City Manager/Assistant KPU General Manager. Mr. Voetberg has served as Assistant City Manager since 1996. In the absence of Manager Amylon, the authority of City/KPU management is vested upon Mr. Voetberg. Mr. Voetberg is licensed as a Civil Engineer in the States of Alaska and Washington. Prior to working for the City, Mr. Voetberg served six years as Assistant Manager/Project Engineer for the Ketchikan Gateway Borough, worked four years as project engineer for Ketchikan Pulp Company and four years with Pool Engineering in Ketchikan.

Washington Group International, Design Engineer. KPU has retained the services of Washington Group International, formerly Raytheon, to design and provide engineering construction management for the Swan Lake-Lake Tyee Intertie project. Jeff Paine, Manager of Electrical and I&C Engineering, is the project manager for this project. Mr. Paine has personally worked on the Swan Lake-Lake Tyee Intertie project since 1995.

Construction Manager/Inspector. KPU has and will contract for construction management/inspection services as required for each construction contract. For right-of-way clearing, Phases I and II, KPU contracted with Great Land Consultants, a firm that specializes in timber sale management. For the primary construction contract that involves remaining clearing and transmission line construction and for construction of the substations, KPU will contract with construction management/inspection firm(s) specializing in this area of expertise.

KPU's Experience in Electrical Generation and Distribution

KPU provides and distributes electrical power to the Ketchikan area with generation from its own hydroelectric and diesel generation plants and through purchases from the Four-Dam pool owned Swan Lake Hydroelectric Facility (KPU is a co-owner and operator of this facility). Operating capacity of these generating resources is as follows:

Silvis Lake Hydro Facility	2,100 kW
Beaver Falls Hydro Facility	5,400 kW
Ketchikan Hydro Facility	4,200 kW
Swan Lake Hydro Facility	22,500 kW
Diesel Generation	22,500 kW

KPU owns and maintains approximately 65 miles of electrical distribution and 65 miles of electrical transmission within and around Ketchikan, Alaska.

6. Legal Issues

None

ATTACHMENT A
PROJECT COST ESTIMATE

LAKE TYEE - SWAN LAKE TRANSMISSION LINE INTERTIE PROJECT CAPITAL COST ESTIMATES

June 2002 Update

COST ITEM

Col A
Original Est.
Year 1997\$ (Baseline)

Col B
Update
Year 2003\$

Construction Costs

A. Transmission Line (57.5 miles)

Segment 1: Tyee Lake - Bell Arm	20,203,988	20,636,748
Segment 2: Bell Arm - Behm Narrows	4,213,145	4,481,618
Segment 3: Behm Narrows - Shrimp Bay	9,665,300	9,974,969
Segment 4: Shrimp Bay - Swan Lake	18,955,976	19,246,018

Subtotal of A.

\$53,038,410

\$54,339,354

B. Switchyards / Substations

Tyee Lake Switchyard	300,000	342,000
Swan Lake Switchyard	1,200,000	1,371,000
Bailey Substation	750,000	857,000

Subtotal of B.

\$2,250,000

\$2,570,000

Subtotal 1 (construction costs A + B)

\$55,288,410

\$56,909,354

Other Costs:

Licensing/Permitting		2,000,000		2,800,000
Engineering/Investigations		5,500,000		6,500,000
Construction Management at:	5.0%	2,764,400	4.0%	2,276,000
Right of Way Costs (Stumpage)		48,000		90,000
Contingency at:	15%	8,293,200	12%	6,829,100

% of Const. Costs for Const. Mgmnt:

Subtotal 2 (construction + other costs)

\$73,894,010

\$75,404,454

Owner's Cost at of Subtotal 1

4.5%

3,325,200

2.5%

1,885,000

TOTAL ESTIMATED PROJECT COST

\$77,219,210

\$77,289,454

Transmission Line miles 57.3

Cost per transmission line mile (includes all costs)

\$1,347,630

\$1,348,856

Assumes project construction starts in spring for two years of construction starting in 2003

Flat overall project cost due to a lowering of Const. Management Costs, Contingency Costs and Owner's Cost

ATTACHMENT B

PROJECT FUNDING

Attachment B

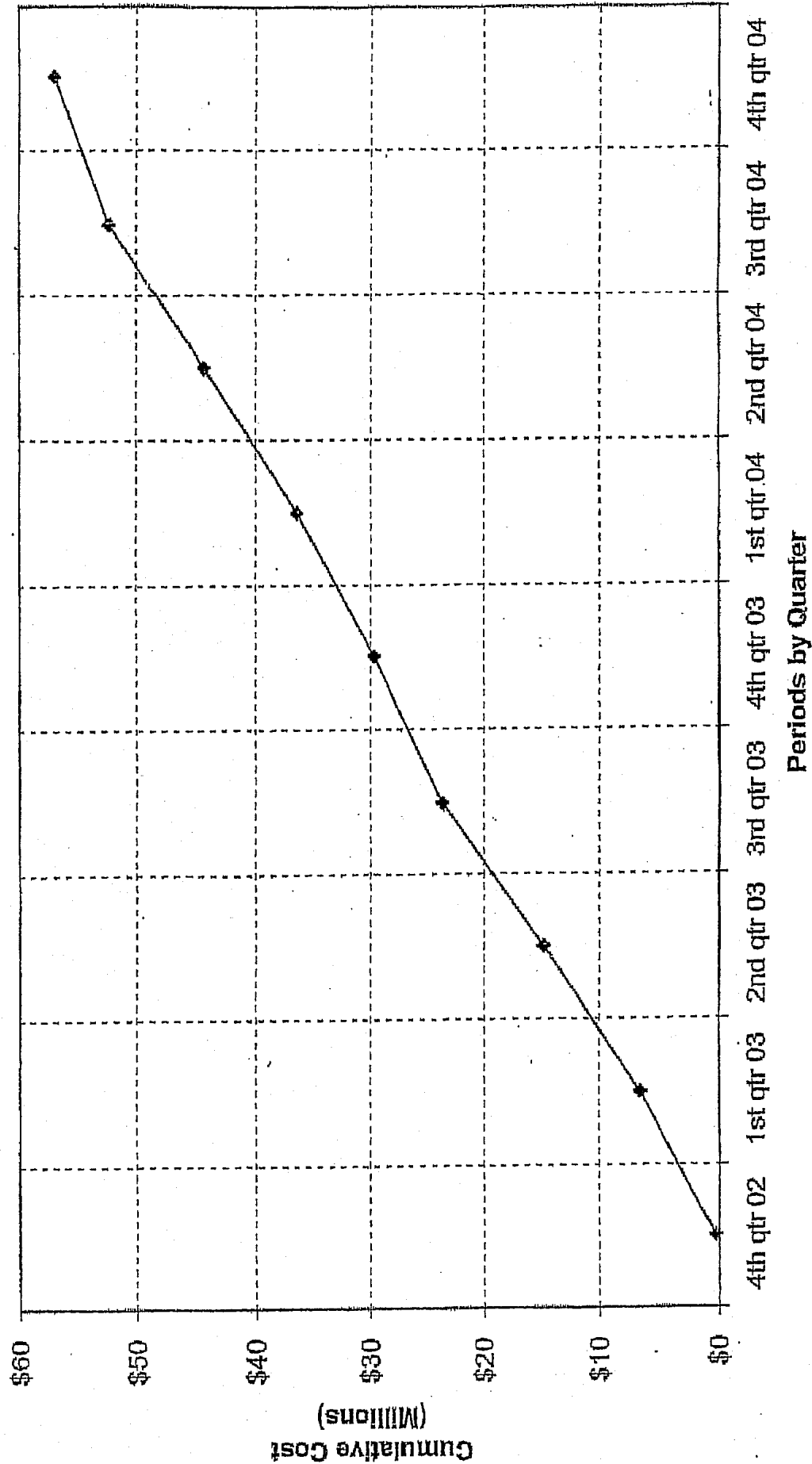
Swan Lake-Lake Tye Intertie Project Funding

Agency	Program	Grant Number	Award Date	Source	Amount Awarded	Amount Anticipated	Total Funding
Department of Administration		94-036	3/30/94	State	4,664,262.00		4,664,262.00
Department of Energy		2155224	11/18/94	State	4,000,000.00		4,000,000.00
Department of Administration		96-001	7/1/95	State	2,560,000.00		2,560,000.00
Alaska Energy Authority		2195028	4/20/99	State	4,443,587.00		4,443,587.00
Four Dam Pool	Pass through from State		FY03	(1) State	14,000,000.00		14,000,000.00
Four Dam Pool			FY03	(2) FDPPA	5,000,000.00		5,000,000.00
Department of Energy		DE-FG07-98ID13607	6/10/98	Federal	9,900,000.00		9,900,000.00
Department of Energy		DE-FG07-98ID13607	9/11/01	Federal	1,996,000.00		1,996,000.00
US Dept of Agriculture (USFS)	Jobs in the Woods	Public Law 106-291 Sec 2607	8/16/01	(3) Federal	2,000,000.00		2,000,000.00
Ketchikan Gateway Borough	SE AK Economic Disaster Relief		FY 01	Federal	5,000,000.00		5,000,000.00
Denali Commission			FY 00	(4) Federal	5,000,000.00		5,000,000.00
US Forest Service		Public Law 107-63, ROW Clearing	FY 02	(3) Federal	2,500,000.00		2,500,000.00
Department of Energy	Indian Energy Group	DE-FG07-98ID13607	FY 02	Federal	2,908,000.00		2,908,000.00
Department of Energy			FY03	Federal	5,000,000.00	5,000,000.00	5,000,000.00
Department of Energy/Other Sources			FY04	Federal	8,317,605.00	8,317,605.00	8,317,605.00
Total					63,971,849.00	13,317,605.00	77,289,454.00

(1) Bonds to be issued by the Four Dam Pool Power Agency and reimbursed by the State of Alaska. Funding anticipated to be available in early 2003
 (2) Payment by Four Dam Pool Power Agency upon issuance of debt. Funding anticipated in early 2003
 (3) Restricted to right-of-way clearing
 (4) Subject to commitment by other funding agencies.

ATTACHMENT C
PROJECT SCHEDULE

Swan Lake - Lake Tye T-Line Project Preliminary Construction Cash Flow Forecast

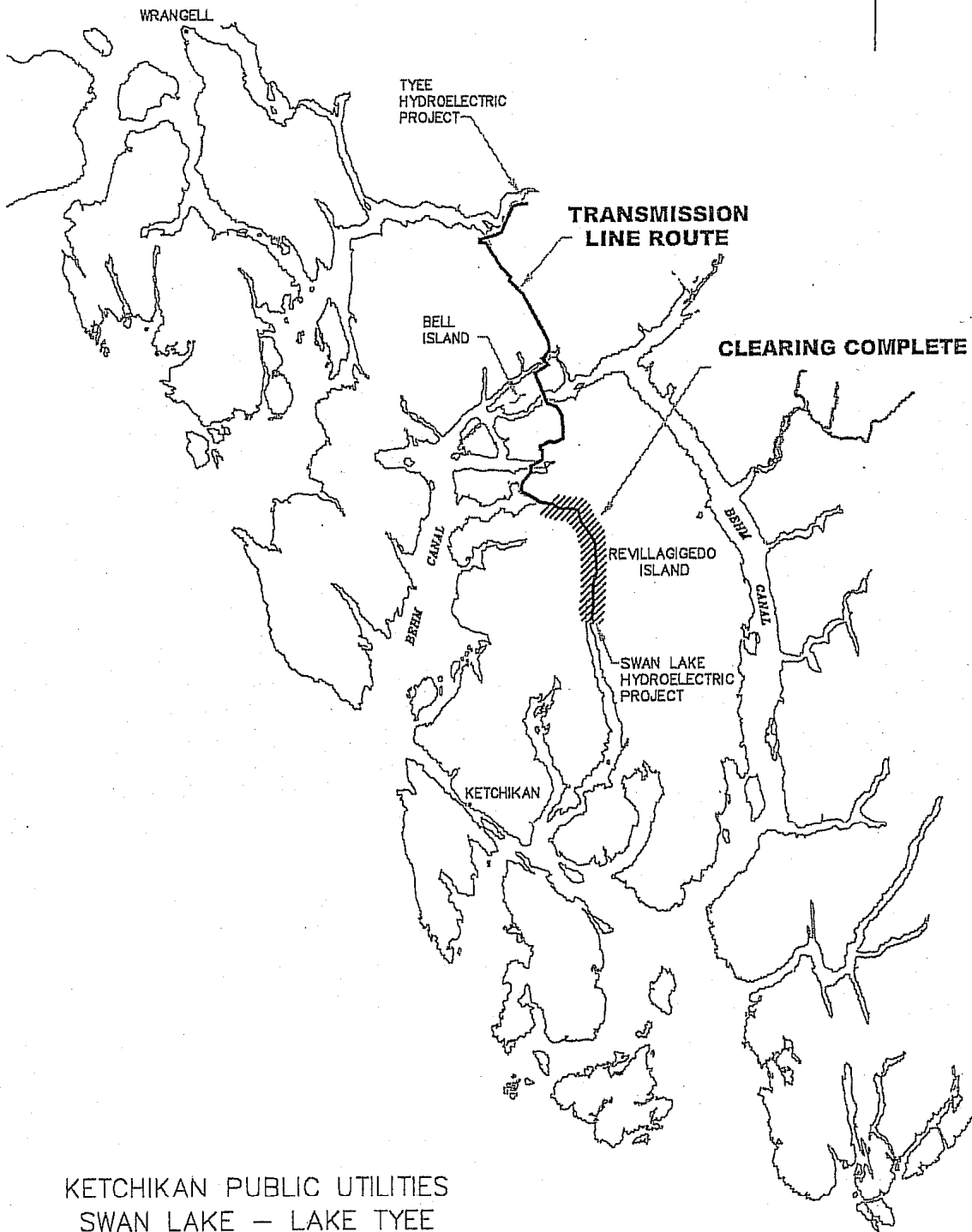


SWAN LAKE - LAKE TYEE INTERTIE T-LINE CONSTRUCTION SEQUENCE

ID	Task Name	Start	Finish	Duration	Cost	2003												2004																	
						Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Swan Lake-Lake Tyee T-Line	09/02/02	12/18/04	480 days	\$56,019,354																														
2	T-Line Materials	09/02/02	02/16/04	304 days	\$9,169,492																														
3	Structures & Foundation Caps	09/02/02	09/02/02	0 days	\$5,716,789																														
4	Period of Bidding	09/02/02	10/05/02	20 days	\$0																														
5	Award Tower & Caps Contract	10/14/02	11/01/02	17 days	\$0																														
6	Design and Fab Pole Caps	11/02/02	03/17/03	76.67 days	\$0																														
7	Start Receiving Foundation Caps	04/21/03	04/21/03	0 days	\$0																														
8	Design and Fab Poles	11/02/02	11/03/03	208.67 days	\$0																														
9	Start Receiving Poles	01/25/04	01/25/04	0 days	\$0																														
10	Conductor & Hardware	12/08/02	12/08/02	0 days	\$2,446,693																														
11	Period of Bidding	12/30/02	02/19/03	30 days	\$0																														
12	Award Conductor & Hardware	02/20/03	03/08/03	10 days	\$0																														
13	Fill Orders for Conductor & Hardware	03/10/03	12/20/03	154 days	\$0																														
14	Start Receiving Conductor & Hardware	02/16/04	02/16/04	0 days	\$0																														
15	T-Line Construction Bidding	10/20/02	01/13/03	55.33 days	\$45,175,922																														
16	T-Line Construction	10/28/02	10/28/02	0 days	\$45,175,922																														
17	Period of Bidding	10/30/02	12/20/02	30 days	\$0																														
18	Review and Award	12/21/02	01/13/03	24 days	\$0																														
19	First T-Line Construction Season	03/15/03	11/22/03	136 days	\$0																														
20	Mobiles & Establish Work Bases	03/31/03	04/16/03	10 days	\$0																														
21	Clearing and Surveying	04/17/03	11/15/03	122 days	\$0																														
22	Construct Foundations	05/06/03	11/22/03	118 days	\$0																														
23	Locate and Install Guy Anchors	06/09/03	11/22/03	98 days	\$0																														
24	Second T-Line Construction Season	03/29/04	12/18/04	152 days	\$0																														
25	Re-establish Work Bases	03/29/04	04/22/04	14 days	\$0																														
26	Complete Foundations & Guy Anchors	04/22/04	07/30/04	57 days	\$0																														
27	Pre-assemble structures	04/22/04	08/14/04	66 days	\$0																														
28	Erect Structures	05/27/04	08/21/04	50 days	\$0																														
29	Plumb and Secure Structures	09/03/04	09/25/04	66 days	\$0																														
30	Stage and String Conductor	07/08/04	09/24/04	44.67 days	\$0																														
31	Sag, Tie and Clip Conductor	08/12/04	10/30/04	46 days	\$0																														
32	Test Installation	11/01/04	12/16/04	23 days	\$0																														
33	Substations	12/30/02	12/04/04	404 days	\$2,570,000																														

9907-D-001

N



KETCHIKAN PUBLIC UTILITIES
SWAN LAKE - LAKE TYEE
138KV TRANSMISSION LINE INTERTIE



KETCHIKAN PUBLIC UTILITIES
KETCHIKAN ALASKA 99901
SWAN LAKE - LAKE TYEE 138KV INTERTIE

9907-D-205

DWG

ATTACHMENT D

PROJECT ORGANIZATIONAL CHART

Owner

Ketchikan Public Utilities

Karl Amylon, General Manager
Bob Newell, Finance Director
Jim Voetberg, Interim Project Manager

Four Dam Pool

Design Engineer
Washington Group

Jeff Paine, Project Manager

Construction Manager/Inspector

Clearing Phase I & II
Great Land Consultants
(currently under contract)

General Construction
Clearing/Transmission Line

Substation Construction

Material Procurement*

Towers/Pile Caps
(currently in bid process)

Conductor/Insulators

Substation Material

Construction Contract*

Phase I Clearing
Columbia Helicopters
(currently under contract)

Phase II Clearing
Silver Bay Logging
(currently under contract)

General Construction
Clearing/Transmission Line

Substation Construction

*Competitively bid utilizing KPU purchasing requirements with liquidated damages sufficient to insure timeline is met